

**A SUPPOSED INCIDENTAL OCCURRENCE OF A SUCKER FISH (*ECHENEIS AUSTRALIS*, Bennett) IN AUSTRALIAN WATERS.**

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[*Contribution from the South Australian Museum.*]

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PLATE XI.

*ECHENEIS AUSTRALIS*, Bennett.

*Echeneis australis*, Bennett, Narr. Whaling Voy., ii., 1840, p. 273.

*Echeneis scutata*, Günther, Ann. Mag. Nat. Hist. (3), v., 1860, p. 401, pl. x., fig. B; and Cat. Fish, Brit. Mus., ii., 1860, p. 381; Lütken, Vid. Medd. Kjobenh., 1875, p. 42.

*Remilegia australis*, Gill, Proc. Acad. Nat. Sci., Phil., 1864, p. 61; Jordan and Evermann, Bull. 47, U.S. Nat. Mus., iii., 1898, p. 2270.

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*Description*.—B. ix.; D. xxvi. 22; A. 24: V. i. 5; P. 22 dex., 24 sin.; C. 13+6. Length of head, 3.5; depth of body, 7.86; and length of caudal, 4.9 in the length; diameter of orbit, 9.9; of eye, 15.6; interorbital width, 1.5; and length of snout, 2.06 in the head; width of body between the pectorals, 4.3; length of disc, 2.0 in the body, or 2.4 caudal included; width of disc, 2.19 in its own length.

*Sucker*.—The disc, which is relatively larger than in any other species of the family, is slightly broader behind than in front; it extends as far forward as the margin of the upper jaw and overhangs the head and body at the sides. The anterior lamellae extend to within twice the diameter of the eye of each other in front, but the posterior pair are widely separated, and leave a considerable portion of smooth skin between and behind them; each lamella is beset with small spines; the free portion of the posterior edge of the disc equals half the length of the snout and extends beyond the extremity of the adpressed ventrals.

*Fins*.—Regarding the sucker as the modified first dorsal, the second fin originates at a point nearly half its own length behind the disc; the highest rays are in the anterior fourth of the fin, whence they rapidly diminish. The relative position, size, and shape of the anal is almost exactly that of the second dorsal, and neither reaches the caudal. The ventrals are pointed; the first ray being the longest; they can be received into a groove, and are placed one-third the length

of the body behind the mandible; the origin of the anal is at the second third. The anterior insertion of the pectoral is over the opercular margin and close to the upper edge of the body, below the disc; the fin is rounded in shape, and its length is two-thirds the width of the disc. The caudal is well developed, and its margin is quite straight when extended. The cleft of the mouth extends three-fourths the distance from the tip of the mandible to the orbit and the lower jaw, which is narrow, projects beyond the upper, a distance equal to the diameter of the orbit. The two nostrils on each side are virtually in contact, immediately above the angle of the mouth, but distant therefrom a little more than from the upper edge of the head; the anterior nostril has a low rim. Gills four, the first only being double, a long slit behind the fourth, gill-rakers moderate and slender, 14 on the lower limb of the first arch and four tubercles on the ascending limb; no pseudobranchiae.

*Teeth*.—The teeth are set in broad villiform bands, slightly separated in front, the upper bands are widest at some distance from the mid-line and lie outside the narrow lower jaw when the mouth is closed; the lower bands are widest in front, and extend forward beyond the upper jaw, which is subtruncated; the outermost series of teeth in each jaw is the largest, and the teeth are directed outwards. The bands of the vomerine and palatine teeth together form an almost continuous gothic arch-like figure, those on the palatines being the broader; the tongue is edentulous.

*Scales*.—The body is everywhere dotted with minute pits containing microscopic scales of ovoid shape; the lateral line is concurrent with the upper edge of the body below the disc from its origin to the end of the pectoral fin, whence it descends to the mid-line of the body, and runs straight to the caudal peduncle, where it again rises slightly, to be lost at the base of one of the rays.

*Colour*.—The colour when fresh was uniform dark slaty-blue, the edges of the fins a little lighter, the disc was brown.

*Length*.—472 mm. (18½ inches).

The following details of the capture of the sucker fish are kindly supplied by Capt. E. H. Hipkins, master of the tug "Falcon":—"On April 27, 1915, while removing the coal lighter from the Norwegian steamer 'Rena,' outward bound from Europe, the fish was, I believe, disturbed from the side of the vessel by the wash of our propellor, for I first noticed it swimming from the 'Rena' on the surface of the water towards us. After berthing the lighter we tried to catch the fish, but though we got it into the net the latter

was so small that the fish jumped out before we could land it and swam under the tug. Later in the day we had to go into dock to tow out a steamer, and passing in I saw the fish coming out, swimming on the surface, and this time we used a larger landing net and secured the fish. I believe the fish came to the surface of the water warmed by the sun's rays, because it found it unusually cold below." Our thanks are due and are tendered to Capt. Hipkins for the trouble he took in securing the stranger, and also for so promptly sending it to the Museum.

Bennett called his fish the "Australasian Remora," but did not state whence it was obtained, nor did he definitely claim it as a new species; there does not, however, appear to be any earlier reference to the name *Echeneis australis*. He writes:—"One individual we captured, and which was by no means the largest we observed, measured one foot five inches in length, and was proportionately broad. Of three examples, one only had 24 striae on the buckler; the other two had 26." The radial formulae of Bennett's specimens may be thus expressed:—

B. x.; D. xxiv.-xxvi. 21; P. 20 + ?; V. 5; A. 24; C. 20.

Griffiths<sup>(1)</sup> used the name "Australasian Remora" under a plate of *Echeneis naucrates* and indexed it as "Australian Remora"; Day<sup>(2)</sup> improperly quotes the entry as *Echeneis australis*.

Günther had two specimens from the Indian Ocean; the larger measured 23 in. (585 mm.) in length, but was stuffed, so that the proportions and dimensions given are those of the smaller example, 7 in., 11 lines (202 mm.). The lateral line is not mentioned; it is shown in the figure, but not quite correctly. The disc is quite flat in the fresh fish, but curls up at the edges after preservation, and in this condition is described by Günther, otherwise his account may be well applied to my example.

Jordan and Evermann include *Remilegia australis* as a North American species on the record of Lütken, but in the synonymy given they credit Bennett with "Plates 24-26." The "whaling voyage" was not illustrated with plates, and one may notice as suggestive of the possible source of error that the dorsal striae in Bennett's specimens are expressed as "24-26."

Although the fish was named "Australasian Remora," evidently to be read in the sense *australis* (southern), Bennett did not approach the coast of New Holland nearer than

(1) Griffiths, in Cuvier, Animal Kingdom, x., Pisces, 1834.

(2) Day, Fishes of India, 1878, p. 257.

Timor on his way to the Cape, and the present record is apparently the first for Australia. It seems probable that the fish had attached itself to the Norwegian vessel in the Indian Ocean, bound for Adelaide, and when in dock transferred its patronage to the "Falcon."

The chief operative factor in the distribution of pelagic fishes is that of temperature, and as the fundamental host of the sucker fish is some larger fish or mammal, it may be presumed that the limits of endurance of temperature as enjoyed by the host is approximately that of the commensal also.

Though a certain amount of discretion in the choice of a host is doubtless indulged in by the sucker fish, it is believed that some species are specially "attached" to specific animals or fishes. In the case of a species that exhibits less discrimination its range is likely to be greater, but the interesting question arises as to what happens when the fish attaches itself to ocean craft? When the vessel is moving north or south the change in temperature is likely to provide the first element of discomfort, but if the vessel maintains approximately the same latitude, the absence of the supply of usual food would doubtless be an early factor in the misplaced attachment of the sucker fish.

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#### EXPLANATION OF PLATE XI.

Disc of the sucker fish (*Echeneis australis*, Bennett), from a cast (seven-eighths natural size).

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